

FIG. 1

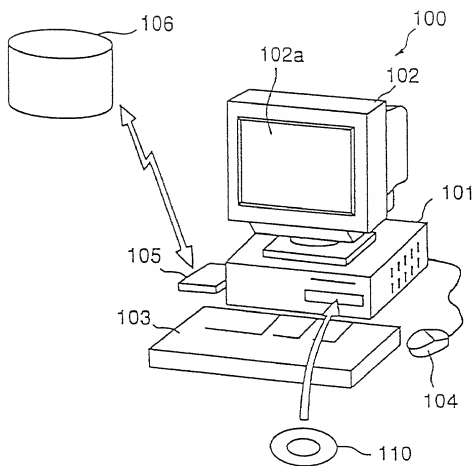


FIG. 2

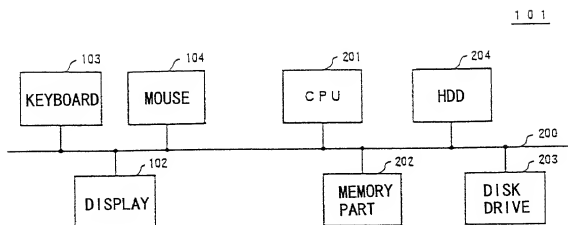


FIG.3

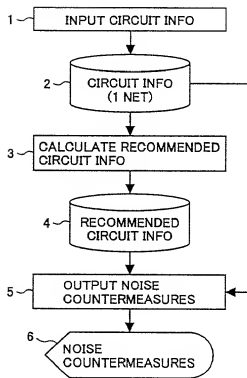


FIG.4

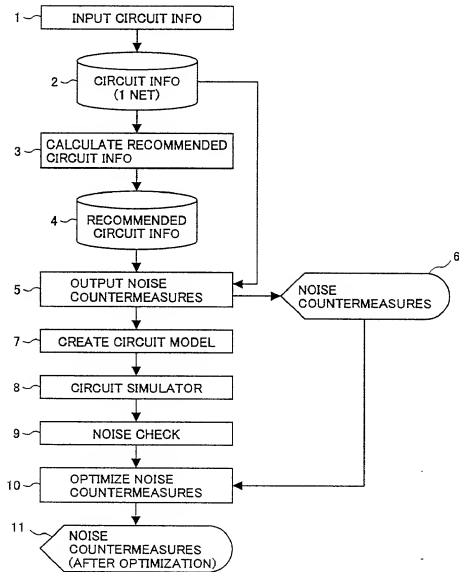


FIG. 5



FIG. 6

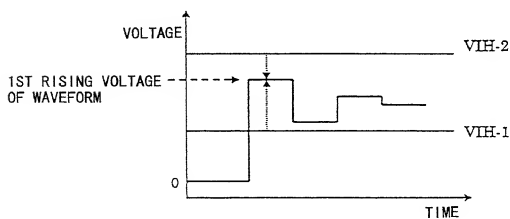


FIG. 7

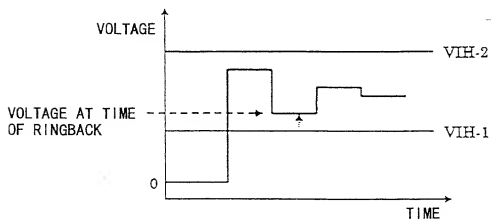


FIG.8

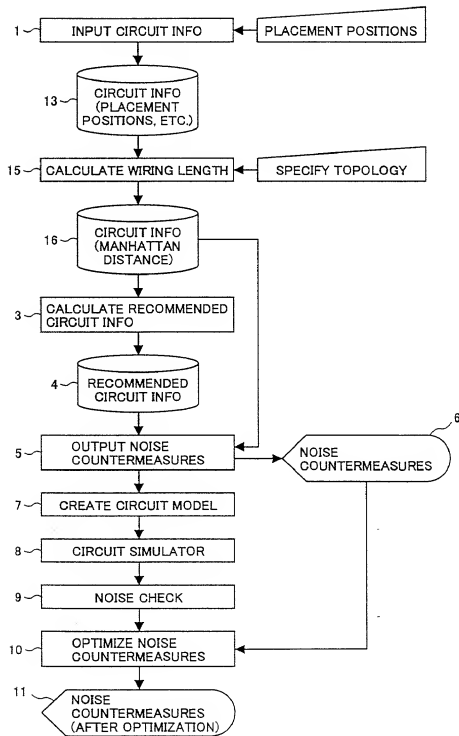


FIG. 9

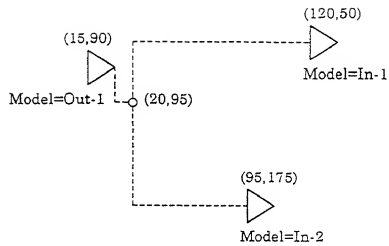


FIG.10

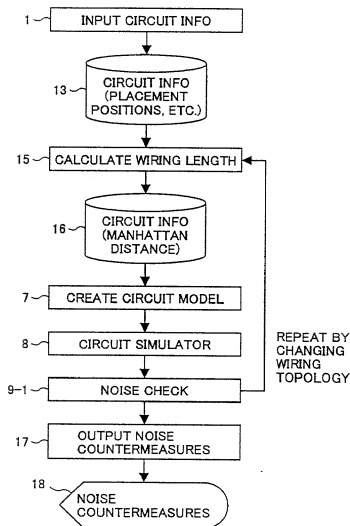


FIG.11

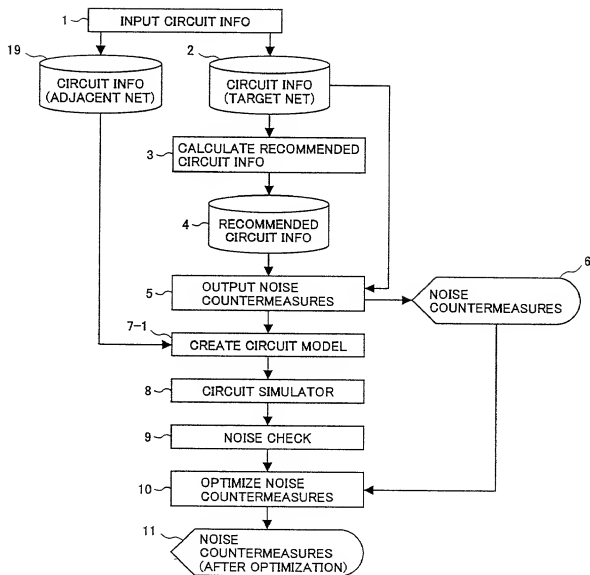


FIG. 12

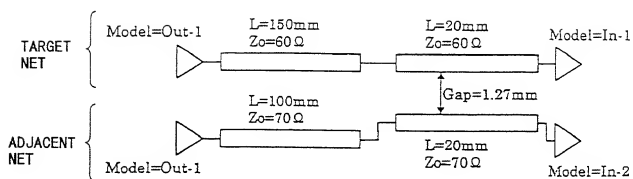


FIG.13

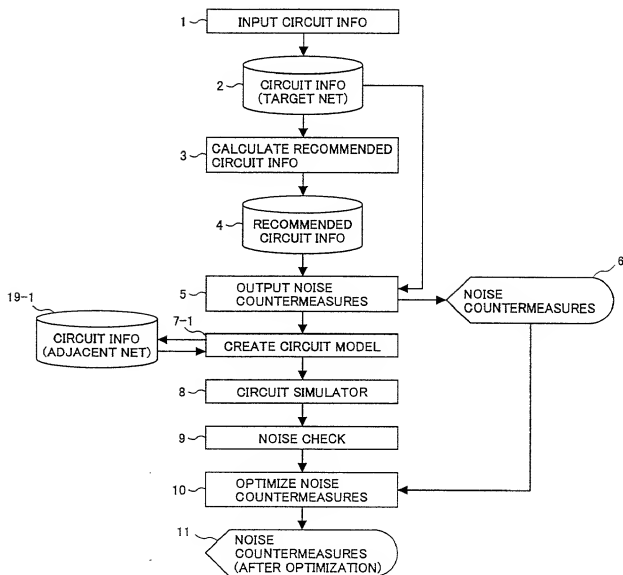


FIG. 14

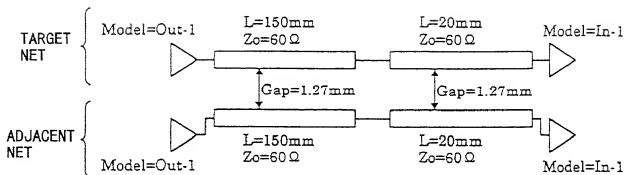


FIG.15

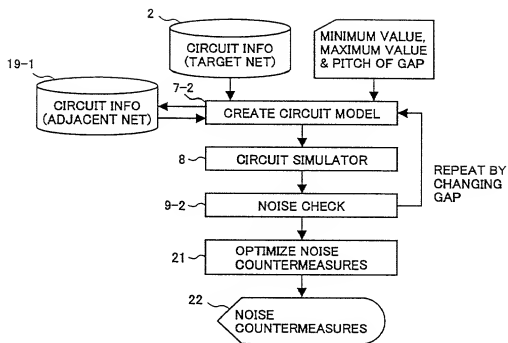


FIG. 16

WIRING TOPOLOGY: LOAD CONCENTRATION TYPE
 CHARACTERISTIC IMPEDANCE OF WIRING PATTERN: $Z_0=60\Omega$
 TRANSMISSION DELAY TIME OF WIRING PATTERN : $T_d=7.0\text{ns/m}$

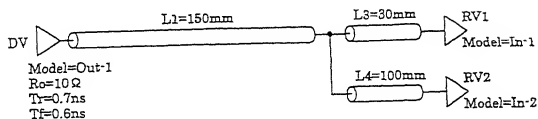


FIG. 17

WIRING TOPOLOGY: LOAD CONCENTRATION TYPE
 CHARACTERISTIC IMPEDANCE OF WIRING PATTERN: $Z_0=60\Omega$
 TRANSMISSION DELAY TIME OF WIRING PATTERN : $T_d=7.0\text{ns/m}$

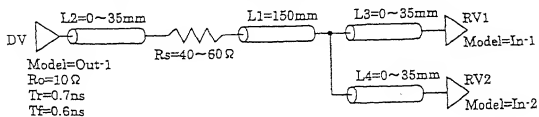


FIG. 18

WIRING TOPOLOGY: STAR TYPE

CHARACTERISTIC IMPEDANCE OF WIRING PATTERN: $Z_0=60\Omega$

TRANSMISSION DELAY TIME OF WIRING PATTERN : $T_d=7.0\text{ns/m}$

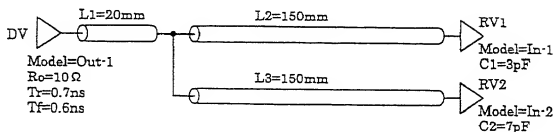


FIG. 19

WIRING TOPOLOGY: LOAD CONCENTRATION TYPE

CHARACTERISTIC IMPEDANCE OF WIRING PATTERN: $Z_0=60\Omega$

TRANSMISSION DELAY TIME OF WIRING PATTERN : $T_d=7.0\text{ns/m}$

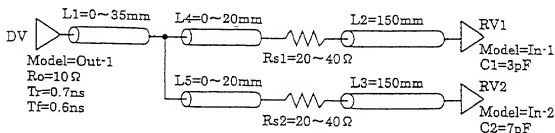


FIG. 20

WIRING TOPOLOGY: STAR TYPE

CHARACTERISTIC IMPEDANCE OF WIRING PATTERN: $Z_0=60\Omega$

TRANSMISSION DELAY TIME OF WIRING PATTERN : $T_d=7.0\text{ns/m}$

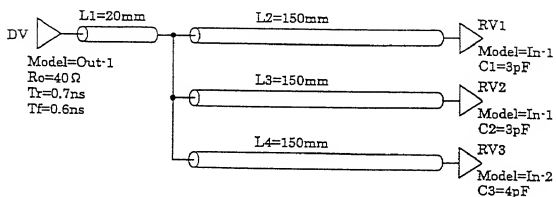


FIG. 21

WIRING TOPOLOGY: LOAD CONCENTRATION TYPE

CHARACTERISTIC IMPEDANCE OF WIRING PATTERN: $Z_0=60\Omega$

TRANSMISSION DELAY TIME OF WIRING PATTERN : $T_d=7.0\text{ns/m}$

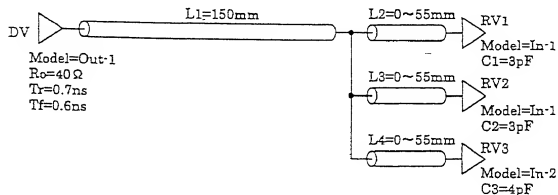


FIG.22

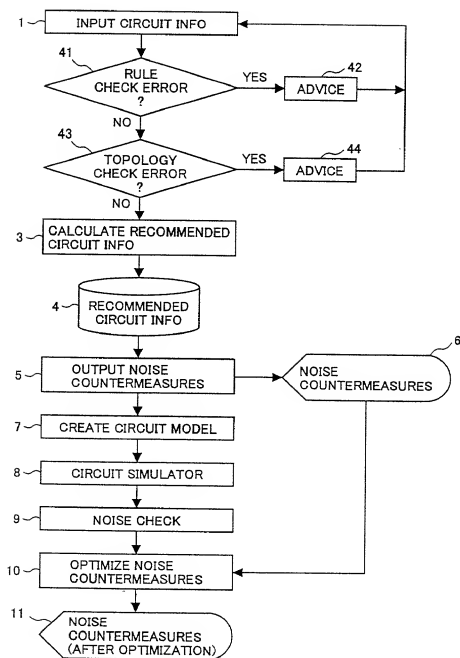


FIG.23

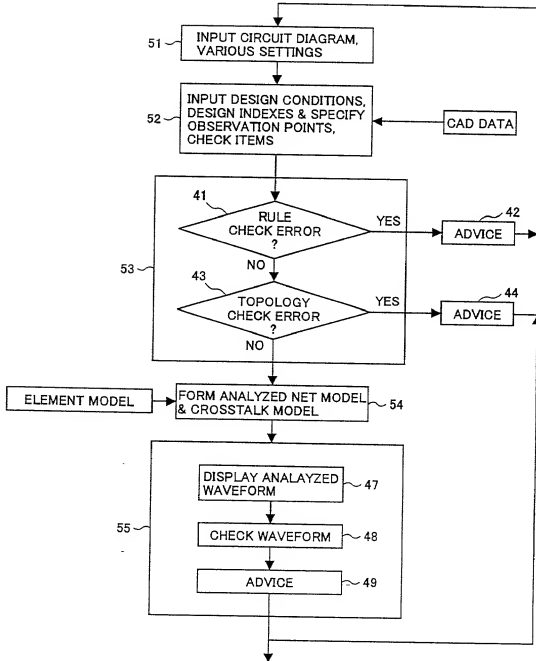


FIG. 24

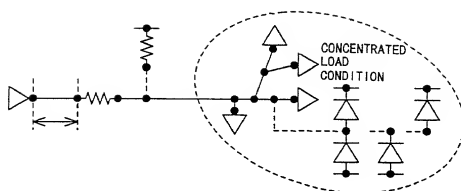


FIG. 25A

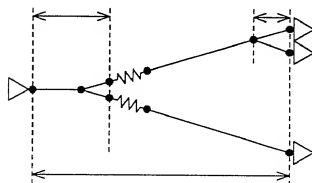


FIG. 25B

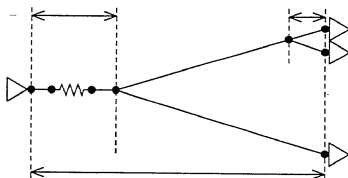


FIG. 26A

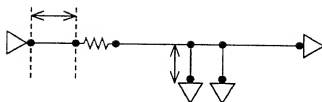


FIG. 26B

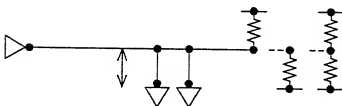


FIG.27

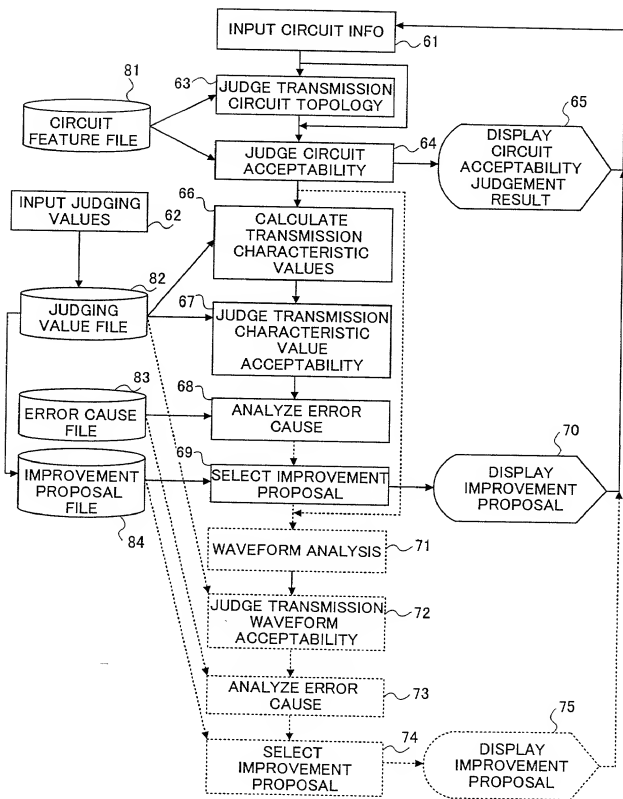


FIG.28

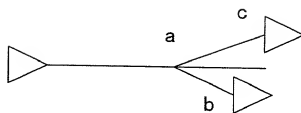


FIG.29

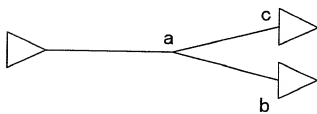


FIG.30

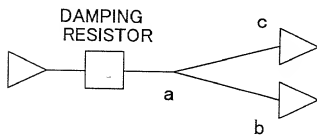


FIG.31

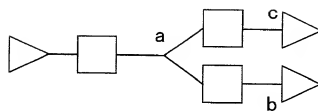


FIG.32

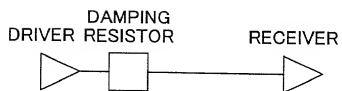


FIG.33

SMALL RECEIVER VOLTAGE	EXCEEDED MAXIMUM RATED VOLTAGE	EXCEEDED DELAY	ERROR CAUSE	
			THE DRIVEN ABILITY OF DRIVER IS SMALL INCLUDING THE DAMPING RESISTOR	THE DRIVEN ABILITY OF DRIVER IS LARGE INCLUDING THE DAMPING RESISTOR
			THE WIRING IS LONG	
			THE DRIVEN ABILITY OF DRIVER IS SMALL INCLUDING THE DAMPING RESISTOR	
x				
	x			
		x		
x				

FIG.34

ERROR CAUSE	COUNTERMEASURE PROPOSAL	TREE JUDGEMENT
THE DRIVEN ABILITY OF DRIVER IS SMALL INCLUDING THE DAMPING RESISTOR	CHANGE TO DAMPING RESISTOR HAVING SMALL RESISTANCE	SOLUTION FOR RESISTANCE
	CHANGE TO DRIVER HAVING LARGE DRIVEN ABILITY	NO SOLUTION FOR RESISTANCE
THE DRIVEN ABILITY OF DRIVER IS LARGE INCLUDING THE DAMPING RESISTOR	CHANGE TO DAMPING RESISTOR HAVING LARGE RESISTANCE	
	CHANGE TO DRIVER HAVING LARGE DRIVEN ABILITY	DAMPING UNACCEPTABLE
THE WIRING IS LONG	SHORTEN THE WIRING LENGTH	

FIG.35

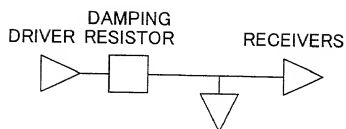


FIG.36

ERROR CAUSE	EXCEEDED DELAY	WAVEFORM DISCONTINUITY	STEPPED PORTION
			×
		×	
	×		
	×		×

FIG.37

ERROR CAUSE	COUNTERMEASURE PROPOSAL	SPECIAL CONDITION
A STEPPED PORTION IS GENERATED	MOVE POSITION OF RECEIVER TOWARDS REMOTE END	RECEIVER POSITION CANNOT BE CHANGED
	PROVIDE TERMINATING RESISTOR AT REMOTE END RECEIVER	POSITION CANNOT BE CHANGED
	REDUCE RESISTANCE OF DAMPING RESISTOR	CANNOT PROVIDE TERMINATING RESISTOR
	CHANGE TO DRIVER HAVING LARGE DRIVEN ABILITY	NO SOLUTION FOR RESISTANCE